

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

RECEIVED
SEP 26 2008
Bure.

SUBMIT IN TRIPLICATE - Other instructions on page 2 Farmington Field Office

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

Energen Resources Corporation

3a. Address

2010 Afton Place, Farmington, NM 87401

3b. Phone No. (include area code)

(505) 325-6800

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

690 FSL, 2020 FEL Sec. 21, T32N, R05W
(O) SW/SE

5. Lease Serial No.

NMM 30351

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.

Carracas 21A # 1

9. API Well No.

30-039-30167

10. Field and Pool, or Exploratory Area

Basin Fruitland Coal

11. County or Parish, State

Rio Arriba NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Acidize ☐ Deepen ☐ Production (Start/Resume) ☐ Water Shut-Off
☐ Alter Casing ☐ Fracture Treat ☐ Reclamation ☐ Well Integrity
☐ Casing Repair ☐ New Construction ☐ Recomplete ☐ Other
☒ Change Plans ☐ Plug and Abandon ☐ Temporarily Abandon
☐ Convert to Injection ☐ Plug Back ☐ Water Disposal

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recomple in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

Energen Resources would like make the following changes to the Carracas 21 A #1:

-Change the setting depth of the 7" intermediate casing from 4900' MD to 4055' MD and enter the Fruitland Coal with footages of 1235 fsl, 1840 fel. The 7" will be cemented with 550 sks 65/35 with additives followed by 125 sks Class G cement with additives. ✓

-Change the 4 1/2" production liner setting depths from 4870' - 6698' MD to 4000'-7375' MD. ✓

-Forms will be filed to change the status of the Carracas 21 A #15 to a Pressure Observation Well (POW) prior to turning the well onto production. ✓

CONDITIONS OF APPROVAL

Adhere to previously issued stipulations.

RCVD OCT 1 '08
OIL CONS. DIV.

Hold C104

for Directional Survey
and "As Drilled" plat

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Nathan Smith

Title Drilling Engineer

Signature

Date 09/26/08

DIST. 3

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Troy L. Salyers

Title

Petroleum Engineer

Date

9-30-2008

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

FFO

Title 18 U.S.C. Section 1001, and Title 43 U.S.C. Section 1212, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

NMOC

Operations Plan

September 26, 2008

Carracas 21 A #1

General Information

Location	690 fsl, 2020 fel at surface 760' fnl, 760' fel at bottom nene S21, T32N, R5W Rio Arriba County, New Mexico
Elevations	7065' GL
Total Depth	7375' 6698' (MD), 3653' (TVD)
Formation Objective	Basin Fruitland Coal

Formation Tops

San Jose	Surface
Nacimiento	1660' (TVD)
Ojo Alamo Ss	3036' (TVD)
Kirtland Sh	3171' (TVD), 3175' (MD)
Fruitland Fm	3321' (TVD), 3341' (MD)
Top Coal	3641' (TVD), 3924' (MD)
Bottom Coal	3665' (TVD)
Total Depth	3653' (TVD), 7375' (MD) ✓

Drilling

The 12 ¼" wellbore will be drilled with a fresh water mud system.

The 8 ¾" wellbore will be drilled with a low solids fresh water/polymer mud system. Weighting materials will be drill cuttings and if needed barite. Mud density is expected to range from 8.9 ppg to 9.5 ppg.

Projected KOP is 2950' TVD with 8.15°/100' doglegs.

The 6 ¼" wellbore will be drilled with a fresh water or brine water system depending on reservoir characteristics. Anticipated BHP can be as high as 1100 psi.

Blowout Control Specifications:

A 3000 psi minimum double ram or annulus BOP stack will be used following nipple up of casing head. Test BOP to 250 psi for 15 min and 1500 psi for 15 min. A 2" nominal, 2000 psi minimum choke manifold will also be used. Test choke manifold to 1500 psi for 30 min. An upper Kelly Cock valve handle and drill string valve should be available to fit each drill string and be available on the rig floor during drilling operations.

Logging Program:

Open hole logs: None

Mud logs: From 3321' (TVD), 3341' (MD) to TD.

Surveys: Surface to KOP every 500' and a minimum of every 250' for directional.

Tubulars

Casing, Tubing, & Casing Equipment:

String	Interval	Wellbore	Casing	Csg Wt	Grade
Surface	0'-200'	12 1/4"	9 5/8"	32.3 ppf	H-40 ST&C
Intermediate	0'-3653' (TVD) 4055' (MD) ✓	8 3/4"	7"	23.0 ppf	J-55 LT&C
Production	3641'-3653' (TVD) 4000'-7375' (MD) ✓	6 1/4"	4 1/2"	11.6 ppf	J-55 LT&C
Tubing	0'-3950' (MD)		2 3/8"	4.7 ppf	J-55

Casing Equipment:

Surface Casing: Depending on wellbore conditions, a Texas Pattern Guide Shoe on bottom. Casing centralization with standard bow spring centralizers to achieve optimal standoff.

Intermediate Casing: Depending on wellbore conditions, a Cement nose guide shoe with self fill insert float collar on top of bottom joint and casing centralization with standard bow spring and rigid centralizers to optimize standoff. Two turbolating centralizers at the base of the Ojo Alamo are recommended.

Liner: Bull nose guide shoe on bottom of first joint, H-Latch liner drop off tool on top of last joint.

Wellhead

3000 psi 11" x 9 5/8" Slip On Casing Head. 9 5/8" x 7" x 2 3/8" 3000 psi Flanged Wellhead .

Cementing

Surface Casing: 125 sks Std (Type V) with 2.0 % CaCl₂ and 1/4 #/sk Flocele (15.6 ppg, 1.18 ft³/sk 148 ft³ of slurry, 100% excess to circulate to surface). WOC 12 hours. Pressure test surface casing to 750 psi for 30 min.

Intermediate Casing: Before cementing, circulate hole at least 1 1/2 hole volumes of mud and reduce funnel viscosity to minimum to aide in hole cleanout. Depending on wellbore conditions, cement may consist of 550 sks 65/35 with 6.0 % Bentonite, 2.0 % CaCl₂, 10 #/sk Gilsonite, and 1/2 #/sk Flocele (12.3 ppg, 1.93 ft³/sk) and a tail of 125 sks Sk with 1/4 #/sk Flocele (15.6 ppg, 1.18 ft³/sk). (1440 ft³ of slurry, 100 % excess to circulate to surface). Test casing to 1200 psi for 30 min. **1200 psi**

Other Information

- 1) This well will be an open hole completion lined with an uncemented pre-drilled liner.
- 2) If lost circulation is encountered, sufficient LCM will be added to the mud system to maintain well control. The intermediate string may need to be cemented in multiple stages with a slurry design deviated from that listed above.
- 3) If high reservoir pressures or water flows are encountered slurry design may need to be deviated to from those listed above to satisfy wellbore and formation conditions.
- 4) No abnormal temperatures or pressures are anticipated. This gas is dedicated.

Carracas

Carson Natl Forest - NE Sec 21, T32N R5W

Middle Mesa

Carracas 21 A #1 ✓

Final Plan

Plan: Final

Planned Wellpath

26 September, 2008

Project: Carson Natl Forest - NE Sec 21, T32N R5W
Site: Middle Mesa
Well: Carracas 21 A #1
Wellbore: Final Plan
Plan: Final (Carracas 21 A #1/Final Plan) ✓

PROJECT DETAILS: Carson Natl Forest - NE Sec 21, T32N R5W

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Central Zone

System Datum: Mean Sea Level

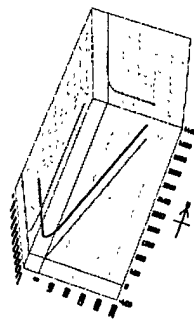
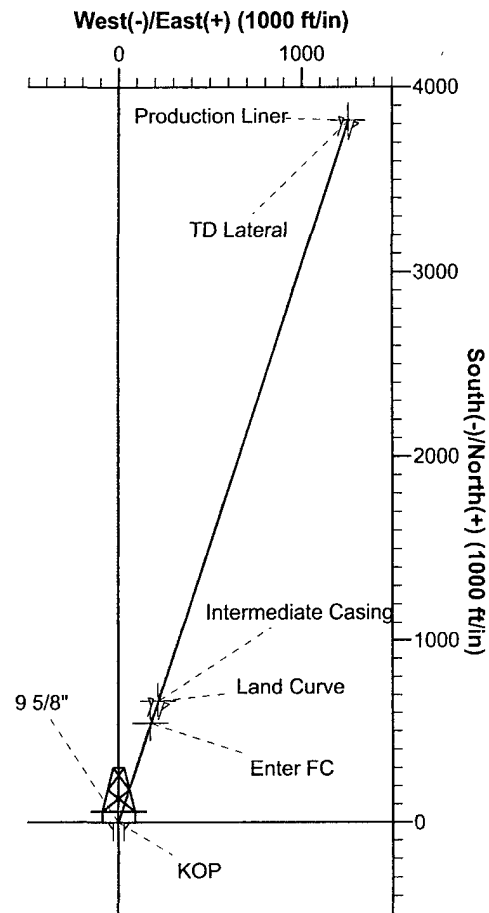
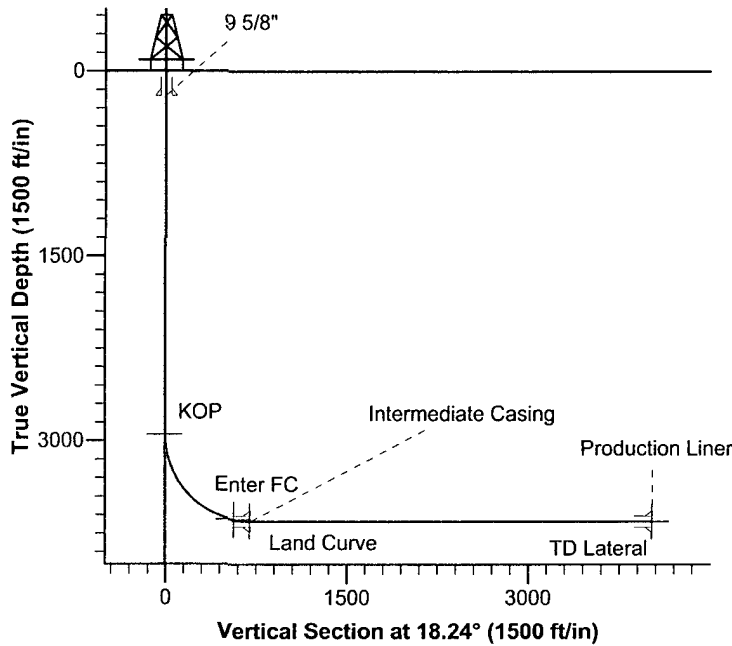


Azimuths to True North
Magnetic North: 10.07°

Magnetic Field
Strength: 51204.7 snT
Dip Angle: 63.80°
Date: 9/26/2008
Model: IGRF200510

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2950.0	0.00	0.00	2950.0	0.0	0.0	0.00	0.00	0.0	KOP
3	3924.2	79.40	18.25	3641.0	544.8	179.6	8.15	18.25	573.6	Enter FC ✓
4	4054.3	90.00	18.15	3653.0	667.7	220.0	8.15	-0.52	703.0	Land Curve
5	7375.3	90.00	18.33	3653.0	3821.8	1259.5	0.01	93.10	4024.0	TD Lateral ✓



Energen

Planned Wellpath

Company: Carracas
Project: Carson Natl Forest - NE Sec 21, T32N R5W
Site: Middle Mesa
Well: Carracas 21 A #1
Wellbore: Final Plan
Design: Final

Local Co-ordinate Reference: Well Carracas 21 A #1
TVD Reference: KB @ 7079.0ft (L&W #1)
MD Reference: KB @ 7079.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Project	Carson Natl Forest - NE Sec 21, T32N R5W		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Central Zone		

Site	Middle Mesa		
Site Position:		Northing:	2,170,795.00 ft
From:	Lat/Long	Easting:	1,314,477.46 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	36° 57' 37.512 N
		Longitude:	107° 21' 56.232 W
		Grid Convergence:	-0.67 °

Well	Carracas 21 A #1		
Well Position	+N/-S	0.0 ft	Northing: 2,170,795.00 ft
	+E/-W	0.0 ft	Easting: 1,314,477.46 ft
Position Uncertainty	0.0 ft	Wellhead Elevation:	7,065.0 ft
		Latitude:	36° 57' 37.512 N
		Longitude:	107° 21' 56.232 W
		Ground Level:	7,065.0 ft

Wellbore	Final Plan				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/26/2008	10.07	63.80	51,205

Design	Final			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	18.24

Survey Tool Program	Date	9/26/2008		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,375.3	Final (Final Plan)		

Planned Survey							
MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
0.0	0.0	0.00	0.00	0.00	0.0	0.0	0.0
100.0	100.0	0.00	0.00	0.00	0.0	0.0	0.0
200.0	200.0	0.00	0.00	0.00	0.0	0.0	0.0
300.0	300.0	0.00	0.00	0.00	0.0	0.0	0.0
400.0	400.0	0.00	0.00	0.00	0.0	0.0	0.0
500.0	500.0	0.00	0.00	0.00	0.0	0.0	0.0
600.0	600.0	0.00	0.00	0.00	0.0	0.0	0.0
700.0	700.0	0.00	0.00	0.00	0.0	0.0	0.0
800.0	800.0	0.00	0.00	0.00	0.0	0.0	0.0
900.0	900.0	0.00	0.00	0.00	0.0	0.0	0.0
1,000.0	1,000.0	0.00	0.00	0.00	0.0	0.0	0.0
1,100.0	1,100.0	0.00	0.00	0.00	0.0	0.0	0.0

Energen

Planned Wellpath

Company: Carracas
Project: Carson Natl Forest - NE Sec 21, T32N R5W
Site: Middle Mesa
Well: Carracas 21 A #1
Wellbore: Final Plan
Design: Final

Local Co-ordinate Reference: Well Carracas 21 A #1
TVD Reference: KB @ 7079.0ft (L&W #1)
MD Reference: KB @ 7079.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
1,200.0	1,200.0	0.00	0.00	0.00	0.0	0.0	0.0
1,300.0	1,300.0	0.00	0.00	0.00	0.0	0.0	0.0
1,400.0	1,400.0	0.00	0.00	0.00	0.0	0.0	0.0
1,500.0	1,500.0	0.00	0.00	0.00	0.0	0.0	0.0
1,600.0	1,600.0	0.00	0.00	0.00	0.0	0.0	0.0
1,700.0	1,700.0	0.00	0.00	0.00	0.0	0.0	0.0
1,800.0	1,800.0	0.00	0.00	0.00	0.0	0.0	0.0
1,900.0	1,900.0	0.00	0.00	0.00	0.0	0.0	0.0
2,000.0	2,000.0	0.00	0.00	0.00	0.0	0.0	0.0
2,100.0	2,100.0	0.00	0.00	0.00	0.0	0.0	0.0
2,200.0	2,200.0	0.00	0.00	0.00	0.0	0.0	0.0
2,300.0	2,300.0	0.00	0.00	0.00	0.0	0.0	0.0
2,400.0	2,400.0	0.00	0.00	0.00	0.0	0.0	0.0
2,500.0	2,500.0	0.00	0.00	0.00	0.0	0.0	0.0
2,600.0	2,600.0	0.00	0.00	0.00	0.0	0.0	0.0
2,700.0	2,700.0	0.00	0.00	0.00	0.0	0.0	0.0
2,800.0	2,800.0	0.00	0.00	0.00	0.0	0.0	0.0
2,900.0	2,900.0	0.00	0.00	0.00	0.0	0.0	0.0
2,950.0	2,950.0	0.00	0.00	0.00	0.0	0.0	0.0
KOP							
3,000.0	3,000.0	4.08	18.25	8.15	1.8	1.7	0.6
3,050.0	3,049.7	8.15	18.25	8.15	7.1	6.7	2.2
3,100.0	3,098.9	12.23	18.25	8.15	15.9	15.1	5.0
3,150.0	3,147.3	16.30	18.25	8.15	28.3	26.8	8.8
3,200.0	3,194.8	20.38	18.25	8.15	44.0	41.8	13.8
3,250.0	3,241.0	24.45	18.25	8.15	63.0	59.9	19.7
3,300.0	3,285.7	28.53	18.25	8.15	85.3	81.1	26.7
3,350.0	3,328.8	32.60	18.25	8.15	110.8	105.2	34.7
3,400.0	3,369.9	36.68	18.25	8.15	139.2	132.2	43.6
3,450.0	3,408.9	40.75	18.25	8.15	170.4	161.9	53.4
3,500.0	3,445.6	44.83	18.25	8.15	204.4	194.1	64.0
3,550.0	3,479.8	48.90	18.25	8.15	240.9	228.8	75.4
3,600.0	3,511.3	52.98	18.25	8.15	279.7	265.6	87.6
3,650.0	3,539.9	57.05	18.25	8.15	320.6	304.5	100.4
3,700.0	3,565.6	61.13	18.25	8.15	363.5	345.3	113.8
3,750.0	3,588.2	65.20	18.25	8.15	408.1	387.6	127.8
3,800.0	3,607.5	69.28	18.25	8.15	454.2	431.4	142.2
3,850.0	3,623.5	73.35	18.25	8.15	501.6	476.4	157.0
3,900.0	3,636.1	77.43	18.25	8.15	550.0	522.3	172.2
3,924.2	3,641.0	79.40	18.25	8.15	573.6	544.8	179.6
Enter FC							
3,950.0	3,645.3	81.50	18.23	8.15	599.1	569.0	187.6
4,000.0	3,650.9	85.58	18.19	8.15	648.8	616.2	203.1
4,054.3	3,653.0	90.00	18.15	8.15	703.0	667.7	220.0

Land Curve

Energen

Planned Wellpath

Company: Carracas
Project: Carson Natl Forest - NE Sec 21, T32N R5W
Site: Middle Mesa
Well: Carracas 21 A #1
Wellbore: Final Plan
Design: Final

Local Co-ordinate Reference: Well Carracas 21 A #1
TVD Reference: KB @ 7079.0ft (L&W #1)
MD Reference: KB @ 7079.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	Build (°/100ft)	V. Sec (ft)	N/S (ft)	E/W (ft)
4,100.0	3,653.0	90.00	18.15	0.00	748.7	711.1	234.2
4,200.0	3,653.0	90.00	18.16	0.00	848.7	806.2	265.4
4,300.0	3,653.0	90.00	18.16	0.00	948.7	901.2	296.6
4,400.0	3,653.0	90.00	18.17	0.00	1,048.7	996.2	327.7
4,500.0	3,653.0	90.00	18.17	0.00	1,148.7	1,091.2	358.9
4,600.0	3,653.0	90.00	18.18	0.00	1,248.7	1,186.2	390.1
4,700.0	3,653.0	90.00	18.18	0.00	1,348.7	1,281.2	421.3
4,800.0	3,653.0	90.00	18.19	0.00	1,448.7	1,376.2	452.5
4,900.0	3,652.9	90.00	18.20	0.00	1,548.7	1,471.2	483.8
5,000.0	3,652.9	90.00	18.20	0.00	1,648.7	1,566.2	515.0
5,100.0	3,652.9	90.00	18.21	0.00	1,748.7	1,661.2	546.2
5,200.0	3,652.9	90.00	18.21	0.00	1,848.7	1,756.2	577.5
5,300.0	3,652.9	90.00	18.22	0.00	1,948.7	1,851.2	608.7
5,400.0	3,652.9	90.00	18.22	0.00	2,048.7	1,946.2	640.0
5,500.0	3,652.9	90.00	18.23	0.00	2,148.7	2,041.2	671.3
5,600.0	3,652.9	90.00	18.23	0.00	2,248.7	2,136.2	702.6
5,700.0	3,652.9	90.00	18.24	0.00	2,348.7	2,231.1	733.9
5,800.0	3,652.9	90.00	18.25	0.00	2,448.7	2,326.1	765.2
5,900.0	3,652.9	90.00	18.25	0.00	2,548.7	2,421.1	796.5
6,000.0	3,652.9	90.00	18.26	0.00	2,648.7	2,516.0	827.8
6,100.0	3,652.9	90.00	18.26	0.00	2,748.7	2,611.0	859.1
6,200.0	3,652.9	90.00	18.27	0.00	2,848.7	2,706.0	890.5
6,300.0	3,652.9	90.00	18.27	0.00	2,948.7	2,800.9	921.8
6,400.0	3,652.9	90.00	18.28	0.00	3,048.7	2,895.9	953.2
6,500.0	3,652.9	90.00	18.28	0.00	3,148.7	2,990.8	984.6
6,600.0	3,652.9	90.00	18.29	0.00	3,248.7	3,085.8	1,015.9
6,700.0	3,653.0	90.00	18.30	0.00	3,348.7	3,180.7	1,047.3
6,800.0	3,653.0	90.00	18.30	0.00	3,448.7	3,275.7	1,078.7
6,900.0	3,653.0	90.00	18.31	0.00	3,548.7	3,370.6	1,110.1
7,000.0	3,653.0	90.00	18.31	0.00	3,648.7	3,465.6	1,141.5
7,100.0	3,653.0	90.00	18.32	0.00	3,748.7	3,560.5	1,173.0
7,200.0	3,653.0	90.00	18.32	0.00	3,848.7	3,655.4	1,204.4
7,300.0	3,653.0	90.00	18.33	0.00	3,948.7	3,750.4	1,235.8
7,375.3	3,653.0	90.00	18.33	0.00	4,024.0	3,821.8	1,259.5

TD Lateral

Energen

Planned Wellpath

Company: Carracas
Project: Carson Natl Forest - NE Sec 21, T32N R5W
Site: Middle Mesa
Well: Carracas 21 A #1
Wellbore: Final Plan
Design: Final

Local Co-ordinate Reference: Well Carracas 21 A #1
TVD Reference: KB @ 7079.0ft (L&W #1)
MD Reference: KB @ 7079.0ft (L&W #1)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Land Curve - plan hits target - Point	0.00	0.00	3,653.0	667.7	220.0	2,171,460.08	1,314,705.26	36° 57' 44.114 N	107° 21' 53.521 W
TD Lateral - plan hits target - Point	0.00	0.00	3,653.0	3,821.8	1,259.5	2,174,601.79	1,315,781.62	36° 58' 15.299 N	107° 21' 40.712 W
KOP - plan hits target - Point	0.00	0.00	2,950.0	0.0	0.0	2,170,795.00	1,314,477.46	36° 57' 37.512 N	107° 21' 56.232 W
Enter FC - plan hits target - Point	0.00	0.00	3,641.0	544.8	179.6	2,171,337.66	1,314,663.43	36° 57' 42.899 N	107° 21' 54.019 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
200.0	200.0	9 5/8"	9-5/8	12-1/4	
4,055.0	3,653.0	Intermediate Casing	7	8-3/4	
7,375.0	3,653.0	Production Liner	4-1/2	6-1/4	

Checked By: _____ Approved By: _____ Date: _____